

Patent Claims

1. A use of a compound for the manufacture of a medicament for the treatment of a patient suffering from a disease or a disorder correlated directly or indirectly with sarcoidosis,
5 wherein said compound is a peptide or a polypeptide comprising the following amino acid sequence:
Arg-Lys-Gln-Met-Ala-Val-Lys-Lys-Tyr-Leu (SEQ ID No. 4).
2. A use according to claim 1, wherein said peptide or a polypeptide further comprises at least one of the following amino acid sequences:
10 His-Ser-Asp (SEQ ID No. 14); Phe-Thr-Asp (SEQ ID No. 13).
3. A use according to claim 1, wherein said peptide or a polypeptide further comprises the amino acid sequences His-Ser-Asp (SEQ ID No. 14) and Phe-Thr-Asp (SEQ ID No. 13).
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4. A use according to claim 1, wherein said peptide or a polypeptide has the following amino acid sequence:
 $(A)_n$ -Arg-Lys-Gln-Met-Ala-Val-Lys-Lys-Tyr-Leu- $(B)_m$
wherein
20 A, B is any natural occurring amino acid residue, A and B are independently from each other; and n, m is an integer having values from 0 – 25; n and m being independently from each other.
5. A use according to claim 4, wherein, if $n > 2$, $(A)_n$ has the following sequence:
25 $(X)_o$ -Phe-Thr-Asp- $(Y)_p$
wherein
X, Y is any natural occurring amino acid residue, X and Y are independently from each other; and o, p is an integer having values from 0 – 11, o and p being independently from each other.
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6. A use according to claim 5, wherein, if $o > 2$ $(X)_o$ has the following sequence:
 $(X')_q$ -His-Ser-Asp- $(X'')_r$
wherein X', X'' is any natural occurring amino acid residue, X' and X'' are independently

from each other; and r, q is an integer having values from 0 – 4, r and q being independently from each other.

7. A use according to claim 4, wherein the sequence of said peptide or polypeptide is selected from the following group:
- (i) Arg-Lys-Gln-Met-Ala-Val-Lys-Lys-Tyr-Leu (SEQ ID No. 4);
 - (ii) Phe-Thr-Asp-X¹-X²-X³-X⁴-X⁵-Arg-Lys-Gln-Met-Ala-Val-Lys-Lys-Tyr-Leu-Asn-Ser-Ile-Leu-Asn (SEQ ID No. 5);
 - (iii) Phe-Thr-Asp-Asn-Tyr-Thr-Arg-Leu-Arg-Lys-Gln-Met-Ala-Val-Lys-Lys-Tyr-Leu-Asn-Ser-Ile-Leu-Asn (SEQ ID No. 6);
 - (iv) Phe-Thr-Asp-Ser-Tyr-Ser-Arg-Tyr-Arg-Lys-Gln-Met-Ala-Val-Lys-Lys-Tyr-Leu (SEQ ID No. 7);
 - (v) His-Ser-Asp-X¹-X²-Phe-Thr-Asp-X³-X⁴-X⁵-X⁶-X⁷-Arg-Lys-Gln-Met-Ala-Val-Lys-Lys-Tyr-Leu (SEQ ID No. 8);
 - (vi) His-Ser-Asp-Ala-Val-Phe-Thr-Asp-Asn-Tyr-Thr-Arg-Leu-Arg-Lys-Gln-Met-Ala-Val-Lys-Lys-Tyr-Leu (SEQ ID No. 9);
 - (vii) His-Ser-Asp-Gly-Ile-Phe-Thr-Asp-Ser-Tyr-Ser-Arg-Tyr-Arg-Lys-Gln-Met-Ala-Val-Lys-Lys-Tyr-Leu (SEQ ID No. 10);
 - (viii) His-Ser-Asp-X¹-X²-Phe-Thr-Asp-X³-X⁴-X⁵-X⁶-X⁷-Arg-Lys-Gln-Met-Ala-Val-Lys-Lys-Tyr-Leu-X⁸-X⁹-X¹⁰-X¹¹ (-X¹²) (SEQ ID No. 11);
 - (ix) His-Ser-Asp-Ala-Val-Phe-Thr-Asp-Asn-Tyr-Thr-Arg-Leu-Arg-Lys-Gln-Met-Ala-Val-Lys-Lys-Tyr-Leu-Asn-Ser-Ile-Leu-Asn (SEQ ID No. 1, VIP);
 - (x) His-Ser-Asp-Gly-Ile-Phe-Thr-Asp-Ser-Tyr-Ser-Arg-Tyr-Arg-Lys-Gln-Met-Ala-Val-Lys-Lys-Tyr-Leu-Ala-Ala-Val-Leu (SEQ ID No. 3, PACAP-27);
 - (xi) His-Ser-Asp-X¹-X²-Phe-Thr-Asp-X³-X⁴-X⁵-X⁶-X⁷-Arg-Lys-Gln-Met-Ala-Val-Lys-Lys-Tyr-Leu-X⁸-X⁹-X¹⁰-X¹¹-X¹²-X¹³-X¹⁴-X¹⁵-X¹⁶-X¹⁷-X¹⁸-X¹⁹-X²⁰-X²¹-X²² (SEQ ID No. 12);
 - (xii) His-Ser-Asp-Gly-Ile-Phe-Thr-Asp-Ser-Tyr-Ser-Arg-Tyr-Arg-Lys-Gln-Met-Ala-Val-Lys-Lys-Tyr-Leu-Ala-Ala-Val-Leu-Gly-Lys-

Arg-Tyr-Lys-Gln-Arg-Val-Lys-Asn-Lys (SEQ ID No. 2, PACAP-38);
wherein $X^1 - X^{22}$ is any naturally occurring amino acid residue.

8. A use according to claim 7, wherein any of said peptides or polypeptides is in a stabilized form.
9. A use according to any of the claims 1 – 8, wherein said peptide or polypeptide has the biological function of, or is functionally similar to VIP or PACAP, or any biologically active derivative, truncated form, analogue or fusion protein thereof.
10. A use according to any of the claims 1 – 9, wherein said medicament is provided as an aerosol applicable for inhalation.
11. A method for treatment of a disease or a disorder correlated directly or indirectly with sarcoidosis in human lung comprising administering to a patient a peptide or a polypeptide comprising the following amino acid sequence:
Arg-Lys-Gln-Met-Ala-Val-Lys-Lys-Tyr-Leu (SEQ ID No. 4).
12. A method according to claim 11, wherein said peptide or a polypeptide further comprises at least one of the following amino acid sequences:
His-Ser-Asp (SEQ ID No. 14); Phe-Thr-Asp (SEQ ID No. 13).
13. A method according to claim 11, wherein said peptide or a polypeptide has the following amino acid sequence:
(A)_n-Arg-Lys-Gln-Met-Ala-Val-Lys-Lys-Tyr-Leu-(B)_m
wherein
A, B is any natural occurring amino acid residue, A and B are independently from each other; and
n, m is an integer having values from 0 – 25, n and m are independently from each other.
14. A method according to claim 13, wherein, if $n > 2$, (A)_n has the following sequence:
(X)_o-Phe-Thr-Asp-(Y)_p

wherein X, Y is any natural occurring amino acid residue, X and Y are independently from each other; and o, p is an integer having values from 0 – 11, o and p are independently from each other.

- 5 15. A method according to claim 14, wherein, if $o > 2$, $(X)_o$ has the following sequence:

$(X')_q\text{-His-Ser-Asp-}(X'')_r$

wherein X', X'' is any natural occurring amino acid residue, X' and X'' are independently from each other; and r, q is an integer having values from 0 – 4, r and q are independently from each other.

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16. A method according to claim 13, wherein the sequence of said peptide or polypeptide is selected from the following group:

(i) Arg-Lys-Gln-Met-Ala-Val-Lys-Lys-Tyr-Leu (SEQ ID No. 4);

(ii) Phe-Thr-Asp- X^1 - X^2 - X^3 - X^4 - X^5 -Arg-Lys-Gln-Met-Ala-Val-Lys-

15 Lys-Tyr-Leu-Asn-Ser-Ile-Leu-Asn (SEQ ID No. 5);

(iii) Phe-Thr-Asp-Asn-Tyr-Thr-Arg-Leu-Arg-Lys-Gln-Met-Ala-Val-Lys-Lys-Tyr-Leu-Asn-Ser-Ile-Leu-Asn (SEQ ID No. 6);

(iv) Phe-Thr-Asp-Ser-Tyr-Ser-Arg-Tyr-Arg-Lys-Gln-Met-Ala-Val-Lys-Lys-Tyr-Leu (SEQ ID No. 7);

20 (v) His-Ser-Asp- X^1 - X^2 -Phe-Thr-Asp- X^3 - X^4 - X^5 - X^6 - X^7 -Arg-Lys-Gln-Met-Ala-Val-Lys-Lys-Tyr-Leu (SEQ ID No. 8);

(vi) His-Ser-Asp-Ala-Val-Phe-Thr-Asp-Asn-Tyr-Thr-Arg-Leu-Arg-Lys-Gln-Met-Ala-Val-Lys-Lys-Tyr-Leu (SEQ ID No. 9);

(vi) His-Ser-Asp-Gly-Ile-Phe-Thr-Asp-Ser-Tyr-Ser-Arg-Tyr-Arg-Lys-Gln-Met-Ala-Val-Lys-Lys-Tyr-Leu (SEQ ID No. 10);

25 (vii) His-Ser-Asp- X^1 - X^2 -Phe-Thr-Asp- X^3 - X^4 - X^5 - X^6 - X^7 -Arg-Lys-Gln-Met-Ala-Val-Lys-Lys-Tyr-Leu- X^8 - X^9 - X^{10} - X^{11} -(X^{12}) (SEQ ID No. 11);

(viii) His-Ser-Asp- X^1 - X^2 -Phe-Thr-Asp- X^3 - X^4 - X^5 - X^6 - X^7 -Arg-Lys-Gln-Met-Ala-Val-Lys-Lys-Tyr-Leu- X^8 - X^9 - X^{10} - X^{11} - X^{12} - X^{13} - X^{14} - X^{15} - X^{16} - X^{17} - X^{18} - X^{19} - X^{20} - X^{21} - X^{22} (SEQ ID No. 12);

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wherein $X^1 - X^{22}$ is any naturally occurring amino acid residue.

17. A method according to any of the claims 11 – 16, wherein any of said peptides or polypeptides is in a stabilized form.
- 5 18. A method according to any of the claims 11 – 17, wherein said peptide or polypeptide has the biological function of, or is functionally similar to VIP or PACAP, or any biologically active derivative, truncated form, analogue or fusion protein thereof.
19. A method according to any of the claims 11 – 18, wherein said peptide or polypeptide is
10 administered to the patient in an aerosol form by inhalation.